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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,445	06/13/2001	Hajime Nishimura	450100-03285	6372

20999 7590 05/01/2008
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EXAMINER	
FLETCHER, JAMES A	
ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
05/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/880,445	NISHIMURA, HAJIME	
	Examiner	Art Unit	
	JAMES A. FLETCHER	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-8 and 10-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 5-8 10-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-3, 5-8, and 9-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki (5,604,646), and further in view of Eerenberg et al (6,621,979), and in further view of Edmondson (3,619,585).

Regarding claim 1, Yamawaki discloses an information playback apparatus comprising:

- data playback means for playing back data from a disc recording medium and outputting playback data (Col 6, lines 4-6 “The drive head 104 is constituted of an optical pickup device, which reads data recorded on the optical disk 101”) in response to a request from later-stage processing (Col 1, lines 33-35 “The internal processor 52 includes a program ROM (Read Only Memory) 52a, and performs the general control of the signal processing unit 50”);
- bit error correction means for correcting a bit error generated in said playback data (Col 6, lines 23-24 “an error correcting unit 15”); and

- a buffer memory for temporarily storing data output by said error correction means and outputting stored data to later-stage processing (Col 3, lines 13-16 "the error-corrected data in the buffer memory 59 is read out to the data transfer controller 56 and is then transferred via the host interface 54 to an external higher rank external unit") wherein, during the predetermined period of time, the error correction means performs retry processing to correct a bit error (Col 4, lines 3-6 "When reading the sync patterns SB1-SB3 fails during a detection timing [detection window] T_{W1} for the sync patterns SB1-SB3, the disk interface 53 outputs dummy data D_D") when said error correction means detects a bit error difficult to correct, and,

Yamawaki does not explicitly disclose that the data being read from the medium has to be output within a predetermined period of time. However, Yamawaki does disclose that the data being read is sent to a finite sized buffer (Col 2, lines 59-60 "The FIFO buffer 57 has sixteen address areas with a capacity of one byte per address"), which is known to those of skill in the art to be a tool for adjusting the timing of the output of data, and is subject to overflow and underflow, suggesting a time limit for the data to be output.

Eerenberg et al teach a predetermined time period for outputting of data (Col 26, lines 1-3 "a video sequence has a timebase, the temporal direction on which, at regular time intervals, usually the frame period, pictures are decoded and presented at a display"), which provide the viewer with a consistent image progression and predictable reproduction.

As suggested by Yamawaki and taught by Eerenberg et al, a predetermined maximum period of time from the reading of data from the medium until it is presented to the viewer is well known, and it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamawaki to specify a maximum time from reading the data from the medium to outputting that data.

Yamawaki also does not explicitly disclose their process on an error that is difficult to correct, but does disclose a sequence of steps to correct errors when the early steps fail to provide adequate error correction (Col 4, lines 47-62), suggesting that some errors are more difficult to correct than others.

Although Yamawaki does not define a point at which an error is considered difficult to correct, the Examiner believes that a hierarchy of methods to correct read errors disclosed by Yamawaki meets the applicant's condition of "difficult to correct."

Yamawaki does not explicitly disclose their process on an error that is difficult to correct, but does disclose a sequence of steps to correct errors when the early steps fail to provide adequate error correction (Col 4, lines 47-62), suggesting that some errors are more difficult to correct than others.

Although Yamawaki does not define a point at which an error is considered difficult to correct, the Examiner believes that a hierarchy of methods to correct read errors disclosed by Yamawaki meets the applicant's condition of "difficult to correct."

Yamawaki discloses various methods in order to correct bit errors as analyzed and discussed above, but do not specifically disclose retry processing as one of those methods.

Edmondson teaches retry processing as a method of correcting read errors from a medium (Col 3, lines 31-34 "The embodiment of the invention illustrated in FIG. 2 has been shown to permit reinterrogation of the read only memory 18 for a specified period of time at the address at which an error first occurred").

As taught by Edmondson, retry processing in the event of a read error is well known, and provides the user with a known method of attempting to correct errors.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamawaki in order to include retry processing.

Regarding claim 2, Yamawaki discloses an information playback apparatus, wherein recognizable dummy data used as a substitute for said playback data containing a bit error difficult to correct is output to said later-stage processing in case said playback data is detected by said error correction means by executing the steps of:

- storing said dummy data in said buffer memory on the basis of a result of error correction processing carried out by said error correction means (Col 4, lines 58-60 "supplying the buffer memory with dummy data without passing through the speed matching buffer when the detection of sync pattern is unsuccessful"); and

- sequentially outputting data stored in said buffer memory in accordance with a predetermined order (Col 4, lines 60-62 "the dummy data corresponds to the target data following the sync pattern that fails to be detected").

Regarding claim 3, Yamawaki discloses an information playback apparatus, wherein;

- when retry processing carried out makes it possible to output playback data corresponding to said dummy data in accordance with said limitation (Col 3, lines 60-62 "The internal processor 52 sends a replacement value for each dummy data D_D stored in the buffer memory 59 to the data transfer controller 56"),
- said retry processing is carried out to reproduce said playback data corresponding to said dummy data and said playback data is output in place of said dummy data (Col 3, lines 60-62 "The internal processor 52 sends a replacement value for each dummy data D_D stored in the buffer memory 59 to the data transfer controller 56").

Regarding claim 5, Yamawaki discloses an information playback apparatus, wherein said limitation requested by said later-stage processing is a request for a transfer of data stored in said buffer memory and said request is made by an external apparatus after a command specifying an operation to play back said data (Col 9, lines 49-52 "The data transfer controller 16 reads the error-corrected data from the buffer memory 19 and transfers the data read to an external higher rank unit [not shown] via the host interface 14").

Regarding claims 11 and 13, Yamawaki discloses an information playback method and program on a medium for playing back data from a disc recording medium and outputting playback data, said information playback method comprising the steps of:

- receiving a request for playback data (Col 1, lines 33-35 "The internal processor 52 includes a program ROM (Read Only Memory) 52a, and performs the general control of the signal processing unit 50");
- correcting a bit error generated in said playback data reproduced from said disc recording medium (Col 6, lines 23-24 "an error correcting unit 15") during the predetermined time (Col 9, lines 27-30 "The writing of the fifteen (15) bytes of dummy data D_D into the buffer memory 19 is designed, as shown in FIG. 8, to be completed within a period of time T_A until the first data D16 is read out");
- temporarily storing data with said error corrected in a buffer memory (Col 4, lines 58-60 "supplying the buffer memory with dummy data without passing through the speed matching buffer when the detection of sync pattern is unsuccessful");
- outputting said data stored in said buffer memory to later-stage processing (Col 9, lines 49-52 "The data transfer controller 16 reads the error-corrected data from the buffer memory 19 and transfers the data read to an external higher rank unit [not shown] via the host interface 14");

- wherein, during the predetermined period of time, the error correction means performs retry processing to correct the bit error (Col 4, lines 3-6 "When reading the sync patterns SB1-SB3 fails during a detection timing [detection window] T_{W1} for the sync patterns SB1-SB3, the disk interface 53 outputs dummy data D_D"), and
- wherein, when the predetermined period of time has elapsed, recognizable dummy data for said playback data to said later-stage processing when a bit error difficult to correct is detected in said step of correcting a bit error generated in said playback data (Col 5, lines 23-24 "The dummy data is supplied to the buffer memory for use in error correction").

Yamawaki does not explicitly disclose that the data being read from the medium has to be output within a predetermined period of time. However, Yamawaki does disclose that the data being read is sent to a finite sized buffer (Col 2, lines 59-60 "The FIFO buffer 57 has sixteen address areas with a capacity of one byte per address"), which is known to those of skill in the art to be a tool for adjusting the timing of the output of data, and is subject to overflow and underflow, suggesting a time limit for the data to be output.

Eerenberg et al teach a predetermined time period for outputting of data (Col 26, lines 1-3 "a video sequence has a timebase, the temporal direction on which, at regular time intervals, usually the frame period, pictures are decoded and presented at a display"), which provide the viewer with a consistent image progression and predictable reproduction.

As suggested by Yamawaki and taught by Eerenberg et al, a predetermined maximum period of time from the reading of data from the medium until it is presented to the viewer is well known, and it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamawaki to specify a maximum time from reading the data from the medium to outputting that data.

Regarding claims 12 and 14, Yamawaki discloses an information playback method and program on a medium for playing back data from a disc recording medium and outputting playback data, said information playback method comprising the steps of:

- temporarily storing said playback data reproduced from said disc recording medium in a buffer memory (Col 3, lines 13-16 "the error-corrected data in the buffer memory 59 is read out to the data transfer controller 56 and is then transferred via the host interface 54 to an external higher rank external unit") in response to a request from later-stage processing (Col 1, lines 33-35 "The internal processor 52 includes a program ROM (Read Only Memory) 52a, and performs the general control of the signal processing unit 50");
- outputting said playback data stored in said buffer memory to later-stage processing (Col 9, lines 49-52 "The data transfer controller 16 reads the error-corrected data from the buffer memory 19 and transfers the data read to an external higher rank unit [not shown] via the host interface 14"); and
- substituting, when the predetermined period of time has elapsed, recognizable dummy data for said playback data to said later-stage

processing as a result of an access to a defective sector of the disc recording medium (Col 6, lines 4-5 "The drive head 104 is constituted of an optical pickup device, which reads data recorded on the optical disk," Col 4, lines 58-60 "supplying the buffer memory with dummy data without passing through the speed matching buffer when the detection of sync pattern is unsuccessful" and Col 9, lines 49-52 "The data transfer controller 16 reads the error-corrected data from the buffer memory 19 and transfers the data read to an external higher rank unit [not shown] via the host interface 14").

Yamawaki does not explicitly disclose that the data being read from the medium has to be output within a predetermined period of time. However, Yamawaki does disclose that the data being read is sent to a finite sized buffer (Col 2, lines 59-60 "The FIFO buffer 57 has sixteen address areas with a capacity of one byte per address"), which is known to those of skill in the art to be a tool for adjusting the timing of the output of data, and is subject to overflow and underflow, suggesting a time limit for the data to be output.

Eerenberg et al teach a predetermined time period for outputting of data (Col 26, lines 1-3 "a video sequence has a timebase, the temporal direction on which, at regular time intervals, usually the frame period, pictures are decoded and presented at a display"), which provide the viewer with a consistent image progression and predictable reproduction.

As suggested by Yamawaki and taught by Eerenberg et al, a predetermined maximum period of time from the reading of data from the medium until it is presented

to the viewer is well known, and it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamawaki to specify a maximum time from reading the data from the medium to outputting that data.

Yamawaki discloses various methods in order to correct bit errors as analyzed and discussed above, but do not specifically disclose alternative processing to access playback data recorded in a defective sector as one of those methods.

Yamawaki does not explicitly disclose their process on an error that is difficult to correct, but does disclose a sequence of steps to correct errors when the early steps fail to provide adequate error correction (Col 4, lines 47-62), suggesting that some errors are more difficult to correct than others.

Although Yamawaki does not define a point at which an error is considered difficult to correct, the Examiner believes that a hierarchy of methods to correct read errors disclosed by Yamawaki meets the applicant's condition of "difficult to correct."

Yamawaki discloses various methods in order to correct bit errors as analyzed and discussed above, but do not specifically disclose retry processing as one of those methods.

Edmondson teaches retry processing as a method of correcting read errors from a medium (Col 3, lines 31-34 "The embodiment of the invention illustrated in FIG. 2 has been shown to permit reinterrogation of the read only memory 18 for a specified period of time at the address at which an error first occurred").

As taught by Edmondson, retry processing in the event of a read error is well known, and provides the user with a known method of attempting to correct errors.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamawaki in order to include retry processing.

4. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki, and further in view of Edmondson (3,619,585).

Regarding claim 6, Yamawaki discloses an information playback apparatus comprising:

- data playback means for playing back data in response to a request from later-stage processing (Col 1, lines 33-35 "The internal processor 52 includes a program ROM (Read Only Memory) 52a, and performs the general control of the signal processing unit 50"), said request including a condition for outputting of the playback data within a predetermined period of time (Col 9, lines 27-30 "The writing of the fifteen (15) bytes of dummy data D_D into the buffer memory 19 is designed, as shown in FIG. 8, to be completed within a period of time T_A until the first data D16 is read out") from a disc recording medium and outputting playback data (Col 6, lines 4-6 "The drive head 104 is constituted of an optical pickup device, which reads data recorded on the optical disk 101"); and
- a buffer memory for temporarily storing said playback data to be output to later-stage processing (Col 4, lines 55-56 "transferring the target data stored in the speed matching buffer to the buffer memory"),
- wherein, when the predetermined period of time has elapsed, recognizable dummy data is substituted for said playback data recorded in a defective

sector of said disc recording medium and output to said later-stage processing as a result of an access to said defective sector (Col 4, lines 58-60 "supplying the buffer memory with dummy data without passing through the speed matching buffer when the detection of sync pattern is unsuccessful").

Yamawaki does not explicitly disclose their process on an error that is difficult to correct, but does disclose a sequence of steps to correct errors when the early steps fail to provide adequate error correction (Col 4, lines 47-62), suggesting that some errors are more difficult to correct than others.

Although Yamawaki does not define a point at which an error is considered difficult to correct, the Examiner believes that a hierarchy of methods to correct read errors disclosed by Yamawaki meets the applicant's condition of "difficult to correct."

Yamawaki discloses various methods in order to correct bit errors as analyzed and discussed above, but do not specifically disclose retry processing as one of those methods.

Edmondson teaches retry processing as a method of correcting read errors from a medium (Col 3, lines 31-34 "The embodiment of the invention illustrated in FIG. 2 has been shown to permit reinterrogation of the read only memory 18 for a specified period of time at the address at which an error first occurred").

As taught by Edmondson, retry processing in the event of a read error is well known, and provides the user with a known method of attempting to correct errors.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamawaki in order to include retry processing.

Regarding claim 7, Yamawaki discloses an information playback apparatus, wherein recognizable dummy data used as a substitute for said playback data recorded in said defective sector is output to said later-stage processing by executing the steps of:

- storing said dummy data in said buffer memory as a result of an access to said defective sector (Col 4, lines 58-60 "supplying the buffer memory with dummy data without passing through the speed matching buffer when the detection of sync pattern is unsuccessful"); and
- sequentially outputting data stored in said buffer memory in accordance with a predetermined order (Col 4, lines 60-62 "the dummy data corresponds to the target data following the sync pattern that fails to be detected").

Regarding claim 8, Yamawaki discloses an information playback apparatus, wherein

- when alternate processing carried out makes it possible to output playback data corresponding to said dummy data in accordance with said limitation (Col 3, lines 60-62 "The internal processor 52 sends a replacement value for each dummy data D_D stored in the buffer memory 59 to the data transfer controller 56"),
- said alternate processing is carried out to reproduce said playback data and said playback data is output in place of said dummy data (Col 3, lines 60-62

"The internal processor 52 sends a replacement value for each dummy data D_D stored in the buffer memory 59 to the data transfer controller 56").

Regarding claim 10, Yamawaki discloses an information playback apparatus, wherein said limitation requested by said later-stage processing is a request for a transfer of data stored in said buffer memory (Col 9, lines 49-52 "The data transfer controller 16 reads the error-corrected data from the buffer memory 19 and transfers the data read to an external higher rank unit [not shown] via the host interface 14") and

- said request is made by an external apparatus after a command specifying an operation to play back said data (Col 9, lines 49-52 "The data transfer controller 16 reads the error-corrected data from the buffer memory 19 and transfers the data read to an external higher rank unit [not shown] via the host interface 14").

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES A. FLETCHER whose telephone number is (571)272-7377. The examiner can normally be reached on 7:45-5:45 M-Th, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2623

JAF
11 April 2008